Patent Claims

1. Method for quantitative or qualitative determination of an analyte or its interaction or reaction kinetics in a system with at least two different phases, comprising the step of taking at least one measurement signal from at least one of the phases, in which case the different phases are present in parallel when the measurement signal is taken and each measurement signal is attributed to one of the at least two phases.

2. Method according to Claim 1 in which the method is conducted as an affinity assay.

3. Method according to Claim 1 ~~or 2~~ in which the analyte constitutes a nucleic acid.

4. Method according to ~~one of Claims 1 through 3~~ claim 1 in which the method is conducted as an immuno-affinity assay.

5. Method according to ~~one of Claims 1 through 4~~ claim 1 in which the volume in which the detection reaction occurs is less than 1 µl, preferably in the range of 50 to 100 nl.

6. Method according to ~~one of the Claims 1 through 5~~ claim 1 in which the method is conducted as a competitive assay.

7. Method according to ~~one of the Claims 1 through 5~~ claim 1 in which the method is conducted as a sandwich assay.

8. Method according to ~~one of the Claims 1 through 7~~ claim 1 in which the analyte or the reactant carries a label by which the measurement signal is generated.

9. Method according to Claim 8 in which the measurement signal is generated by irradiation excitement of the label.

10. Method according to Claim 8 ~~or 9~~ in which, as label, a fluorescent label is provided.

11. Method according to claim 1 ~~one of the Claims 1 through 10~~ in which a first phase is provided as a solid phase and a second phase as a liquid phase.

12. Method according to claim 1 ~~one of the Claims 1 through 11~~ in which the solid phase is formed by walling of a well in a sample carrier.

13. Method according to Claim 12 in which the sample carrier is provided in the form of a micro-titre plate, preferably a nano-titre plate.

14. Method according to Claim 12 ~~or 13~~ in which a well is provided which has a quadratic, cylindrical, truncated pyramid or truncated cone shape.

15. Method according to Claim 12 ~~or 13~~ in which a well is provided whose aperture surface is smaller than its floor surface.

16. Method according to Claim 15 in which a well is provided having a truncated pyramid or truncated cone shape.

17. Method according to claim 1 ~~one of the Claims 1 through 16~~ in which a quenching substance is linked to a phase for suppressing measurement signals of one of the at least two phases.

18. Method according to claim 1 ~~one of the Claims 11 through 17~~ in which a well is provided whose walling and/or floor is coated with a quenching substance, preferably a fluorescence-quenching substance.

19. Method according to claim 1 ~~one of the Claims 1 through 18~~ in which at least one measurement signal is obtained by spatially staggered measurement.

20. Method according to ~~one of the Claims 9 through 19~~ claim 1 in which the sample quantity containing the labelled analyte or the labelled reactant is radiated with a light beam for stimulation of the label and the reacting radiation of the labelling is taken as a measurement signal.

21. Method according to Claim 20 in which the stimulating light beam in the sample volume has a beam diameter of < 40 µm, preferably of about 20 µm.

22. Method according to Claim 20 ~~or 21~~ in which the exciting light beam for taking a plurality of measurement signals is conducted via the sample.

23. Method according to ~~one of the Claims 20 through 22~~ claim 20 in which stimulation occurs with a laser and as a measurement signal fluorescence of the label excited by the laser beam is taken.

24. Sample carrier (20), in particular for use in a method according to ~~one of the Claims 1 through 23~~ claim 1 with one or more wells (21)

characterised by the fact that

at least a portion of the sample carrier (20) at least in the range of one or more wells (21) is coated with fluorescence-quenching material.

25. Sample carrier according to Claim 24 in which the fluorescence-quenching material comprises a metal.

26. Sample carrier according to Claim 25 in which the metal is doped.

27. Sample carrier according to ~~Claim 25 or 26~~ claim 26 in which the metal comprises gold and/or silver.

28. Sample carrier according to claim 24 ~~one of the Claims 24 through 27~~ in which the range comprises the floor (23) and/or the walling (24) of one or more wells (21).

29. Sample carrier according to claim 24 ~~one of the Claims 24 through 28~~ in which one or more wells have a quadratic (31), cylindrical (31), truncated pyramid (21, 35) or truncated cone (21, 35) shape.

30. Sample carrier according to claim 24 ~~one of the Claims 24 through 29~~ in which the well has an aperture surface (36) which is smaller than the floor surface (37) of the well.

31. Sample carrier according to Claim 30 in which the well has a truncated pyramid (35) or truncated cone (35) shape.

32. Sample carrier according to claim 24 ~~one of the Claims 24 through 31~~ in which the sample carrier is designed in the form of a micro-titre plate, preferably a nano-titre plate.